THE *INVENTUM NOVUM* OF JOSEPH LEOPOLD AUENBRUGGER*

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LEOPOLD, or Joseph Leopold Auenbrugger, was born in Graz, Austria, on the 19th of November 1722, the son of Sebastian and Maria Theresia Auenbrugger, innkeepers in that resort spot. If Joseph was his given name, we cannot document when he ceased its use. Neuburger, in a short but complete biography, makes no mention of Joseph and earlier commentaries are likewise silent. Certain it is that the title page of the *Inventum Novum* bears as the author's name, Leopold Auenbrugger.

We commemorate somewhat belatedly the two-hundredth anniversary of this publication, the early history of which is so curious. Our profession largely neglected the book, and the technique it proposed, from 1761 until its translation into French in 1808. It seems natural to inquire whether this delay in recognition stemmed from the times, the man, or the work.

The times in Austria were unsettled and perilous. The kings were uneasy and territory-conscious. Claims were met with counterclaims and a semblance of order was to come only with the peace of Hubertusburg in 1763.

During most of Auenbrugger's professional lifetime his sovereign was Maria Theresia, wife and, after 1765, widow of Francis I, last Holy Roman Emperor save one, and in her own right Queen of Hungary and Bohemia. Historians have described her as beautiful, certainly she was talented and the recognized leader of her devoted people. Some present-day demographer might raise an eyebrow in considering her 16 pregnancies. Ten of her issue survived her, Josef II to succeed her on the throne, Marie Antoinette to be betrothed to the Dauphin and to rule with him when he became Louis XVI. Even Napoleon was to be

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Fig. 1. Reproduction of portrait of Leopold Auenbrugger.
(Property of Vienna Medical Society.)

connected with the remnants of this court by marrying Maria Louise, grandniece by marriage of Josef II. Auenbrugger became an accepted member of the Court at Vienna and was rewarded in later life by Josef II with the title of "Edler von Auenbrugg", conferred not because of the "Inventum Novum" but for his public services and his skill as a practitioner.

We have been left with little source material about this man, as though history would continue the lack of professional recognition he suffered in life. Only a single portrait appears extant, the property of the Vienna Medical Society and invariably reproduced in photograph or line drawing (Figure 1). It is easy to imagine that he was a gentle person, reflecting his early development in a plain but substantial home of appropriate piety. His education posed no hardship of finance or accomplishment and he pursued the study of literature and philosophy at the University of Graz.

When these studies were completed Auenbrugger began his training in Medicine under Van Swieten, former pupil of Boerhaave at Leyden. Van Swieten had come to Vienna at the invitation of the Empress in 1745 to reorganize the medical faculty. To introduce him to Vienna, the Empress, with a diplomatic stroke, placed him in charge of the Imperial Library where his first courses of instruction in Medicine were given. Next, he organized a botanical garden. Only after several years at these activities did he become Professor of Medicine in the University. Although one of the great clinical teachers of his time, Van Swieten does not appear to have understood or accepted Auenbrugger's technique although he knew him to be an excellent student. Auenbrugger's certifying examination was completed on the 26th of April 1752 and he was awarded his degree on November 18, in that year after submission of a thesis dealing with certain Hippocratic aphorisms. In anticipation of the award of his degree, he had joined the Spanish Hospital in Vienna in an unsalaried post. Three years later, in 1755, he was awarded an annual stipend and the title of Associate Physician, to be advanced six years after joining the staff to the rank of Attending Physician. After 10 years of service he resigned from the hospital staff in March 1762, when 40 years of age, in the year following the publication of the *Inventum Novum.*

The Spanish Hospital was regarded as the finest of its time in Vienna, a distinction now difficult to evaluate. Founded in 1718 to care for Spanish, Italian and Dutch residents of the city, it assumed its military function in 1741. The military need probably arose from the efforts of France and Bavaria to invade Bohemia, as well as mobilization for other needs. The hospital thus became the Spanish Military Hospital.

In 1753, during a period of limited peace, the Holy Trinity Hospital was built along the approach to the Spanish Hospital. Holy Trinity Hospital was under separate administration but some physicians served both staffs and Auenbrugger was among their number. In 1760, the hospitals united to become quite naturally the "United" Hospital. Either impatient or out of favor in this reorganization, Auenbrugger chose to resign his post in the United Hospital after two years. He did not again assume a hospital service appointment. Thus, he had no students and this lack may, in part, have delayed the knowledge of percussion.

In 1762 Auenbrugger, at the age of 40, began the practice of medi-

cine in Vienna. He was to enjoy considerable financial success. He is said to have been available to all, rich and poor alike, showing a special devotion to the poor. Even when he had become a favorite at the Court and advanced in years, he is described making his way through the streets of the city with a lantern to light his way while visiting the needy sick.

Thus occupied with practice responsibilities, he nevertheless remained an astute observer and recorder and published on a variety of topics. The 95 pages of the *Inventum Novum* clearly remain his finest work. It would be unconscionable to expect more. In 1771 he reported on "putrid delirious fever" (? osteomyelitis) and in 1776 ventured into the psychiatric field with the publication of a report painstakingly documenting the use of camphor in certain excitements. In a study in 1782, he compared an epidemic of respiratory disease, probably viral influenza, occurring in that year with one observed by him twenty years earlier. In 1783 he described the therapy of patients in an epidemic of diarrhea. His last scientific report took him again to psychiatry, for he wrote of the "quiet madness or the instinct to suicide", urging in its management the drinking of copious draughts of cold water.

During these active years Auenbrugger had no appointment at the University, but in 1796 the Medical Faculty conferred upon him the title of Guest Examiner. He thus became, I take it, Emeritus, never having been Professor. He was 74 years of age at this time, honored by the Court for professional services and well known as the librettist of the opera "Der Rauchfangkehrer", having declined the urgings of many that he continue his musical endeavors.

There is no way to divine the thinking of the Medical Faculty. Was there the realization, finally, that they had been outwitted by some cruel congeries and now they rose to recognize the work and worth of this man? Or was it a political expedient, calculated to win some gain at Court? One is reminded of Samuel Johnson's retort to Lord Chesterfield when the latter at long last became patron of his dictionary and how it might have been said by Auenbrugger,

> "The notice which you have been pleased to take of my labours, had it been early, had been kind; but it has been delayed till I am indifferent and cannot enjoy it; till I am solitary and cannot impart it; till I am known and do not want it."

Enim vero per hæc ſonitus vel altior, vel profundior, vel clarior, vel obſcurior, vel quandoque prope ſuffocatus deprehenditur.

Fig. 2. Reproduction of passage from *Inventum Novum* which reads: "For in truth, through these (techniques) a sound is perceived either higher (in pitch) or lower, or more or less clear or even sometimes almost stifled." (Author's translation.)

In addition to his professional career, rich, save the lack of a clinic or University appointment, Auenbrugger lived a full life. He was abstemious and although not a strict vegetarian is said to have eaten meat sparingly. He remained vigorous even into his later years. The age of his wife, Marianna von Priesterberg, is not recorded but we assume that she too must have been of sturdy constitution and lived a long life. She died when her physician-husband was 85 years of age.

Auenbrugger found satisfaction in his work and great joy in his home, graced by two daughters: Marianna, regarded as a great beauty, and Katharina, an accomplished pianist with a passing good voice who was also an excellent student of Latin and Greek. A community of friends gathered in this home for a weekly musical concert on Sunday afternoons and at other times for talk and to use the modest but well-kept library.

Some 11 years before he died, Auenbrugger lost the sight of one eye in a febrile illness but boasted to his death that he could still read the clock on St. Stephan's Cathedral at some distance from his lodging with his remaining eye. Some have found it not inappropriate to contrast this long full happy life with that of Laennec, whose career terminated so tragically at 45 and who married but two short years before his death. Fate was unkind to each.

What did the *Inventum Novum* offer the profession of that day? Samuel Jones Gee has put it well—"the sounds produced by percussion are simply acoustic phenomena and named accordingly. Sounds are explained by reference to corresponding physical states, that is, to the presence or absence of air in the part percussed." It may be difficult

for us to appreciate that even large disease groups were a hopeless jumble in Auenbrugger's day and there was no orderly distinction among asthma, pneumonia, pleurisy or heart failure. Auenbrugger described the percussion of the chest in health and in disease, recorded the results and urged use of the technique in differential diagnosis. He took pains to point out that he had practiced percussion again and again and that others could easily learn it. But ears were deaf. If only a single sentence of 18 words had been taken to heart, indeed if taken to heart today, these words will still serve (Figure 2).

Why did this technique lie fallow for almost 50 years? A multitude of explanations has been offered. One, that Auenbrugger was a dilettante and not considered as a serious scientist, can be readily dismissed by even the most casual review of his life. Was he a victim of some struggle between the Hippocratic and non-Hippocratic Schools? He found acceptance in neither. He was too Hippocratic for the latter and a plagiarist to the former. Augustin Vogel, in a listing of new books in 1766, confused the *Inventum Novum* as an excerpt from Hippocrates. Had he indeed read it? In a Hippocratic commentary published in Jena in 1768, Auenbrugger was referred to in sarcasm as "that Viennese physician unable to reply" when charged with the plagiarism of the works of Hippocrates.

The Hippocratic school insisted that the *Inventum Novum* was not new. Hippocrates had recognized and taught the succussion splash, pleural rub and, probably, coarse rales. He may well have known some technique of percussion, since he taught the distinction between ascites and meteorism.

The non-Hippocratic school might have pointed out that Lanfranch was known to strike the head of skull fracture suspects with a small rod to elicit sound. Moreover, a Swiss veterinarian in 1700 is said to have struck the skulls of cattle, in those suffering the staggering sickness, with a small hammer to locate a trephine site. Auenbrugger may well have known these usages. He may even have linked this knowledge and a recall of his childhood in his father's wine cellar. Years later Laennec was also to recall a childhood experience in devising the stethoscope. A reading of the subtitle should have made clear the frame in which Auenbrugger regarded his work as new, for he wrote "Ex percussione thoracis humani" (Figure 3).

Members of the profession closest to the man and his work did not

LEOPOLDI AUENBRUGGER

MEDICINÆ DOCTORIS

IN CÆSAREO REGIO NOSOCOMIO NATIONUM

HISPANICO MEDICI ORDINARII.

INVENTUM NOVUM

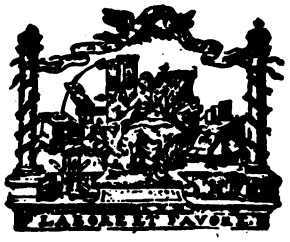
EX

PERCUSSIONE THORACIS HUMANI

UT SIGNO

ABSTRUSOS INTERNI PECTORIS MORBOS

DETEGENDI.



VINDOBONÆ,

TYPIS JOANNIS THOMÆ TRATTNER, CÆS. REG. MAJEST. AULÆ TYPOGRAPHI.

MDCCLXI.

Fig. 3. Title page of *Inventum Novum,* slightly reduced in size.

accept it. Van Swieten failed to recognize the worth of his student. His successor, Anton de Haën, a colleague of Auenbrugger's on the Spanish Hospital staff and a significant investigator in his own right, for he introduced clinical thermometry, thought percussion worthless.

During the tenure of Maximilian Stoll as Professor of Medicine, Auenbrugger and his technique were accepted and we learn, from a surgical paper by Mohrenheim concerning incision of the chest for empyema, that Stoll requested consultation by Auenbrugger on many

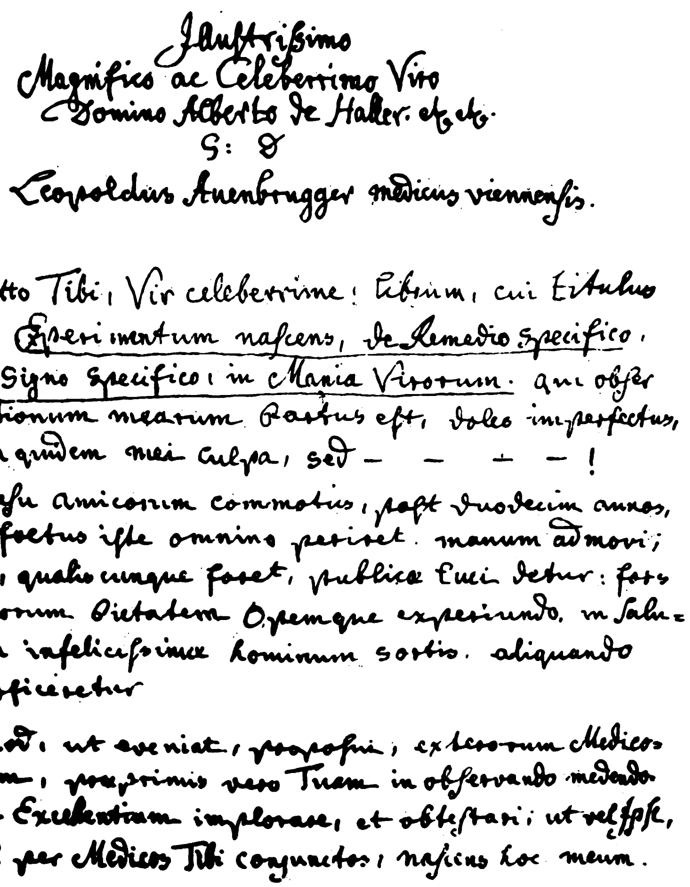
occasions. With the death of Stoll, the technique was again discontinued in Vienna for 10 years until 1795, when Johann Peter Frank revived interest in it.

I have sought to explore whether the publication of the *Inventum Novum* in Latin may have delayed its recognition. But in those days Latin was still the language of the University and would continue to be written and spoken well into the next century. Auenbrugger's Latin, although far from classical, was surely not difficult. I have even sought, without success, to assess some oblique impact of the Reformation on Latin as the University language. Although the Reformation was more than 200 years old at this time, it was still a failure in Austria. The Empress bore a deep enmity for it but her position became paradoxical when she joined the sovereigns of Portugal, France, Spain and Naples to seek and gain from Pope Gregory XIV the papal brief *Dominus ac Redemptor Noster* in 1773 to suppress the Jesuits throughout the world. They were at that time the major force calculated to stem the Reformation. They were classical Latinists. If not because of the Reformation, did Latin become unacceptable because of some veiled hint of casuistry? Or was it simply that this was an early rumbling of nationalism and from now on only native tongues would do. After all, Auenbrugger himself was to write his last papers in German.

It may well have been that the physicians of Auenbrugger's day were less scientists and more philosophers. They sought generalizations. The medical world had not yet been seized by the scientific approach of Copernicus, or Boyle, or Newton or Galileo. Physicians were more interested in speculation than in specifics. These observations of a clinical investigator, to be found in a small volume of 95 pages, may have been suspect. Moreover, the practice and understanding of percussion demanded a new curious correlation of motion and sense. The text needed digestion sentence by sentence. It was the work of a man little known.

The *Inventum Novum* also had the misfortune to be published in the same year as another monumental work—the *De Sedibus* of Morgagni. This work found almost immediate acceptance and perhaps served to overshadow the former.

Outside Vienna there were some who recognized the worth of the *Inventum Novum.* Albrecht van Haller, guiding spirit of the then new university at Göttingen in his *Journal for Scholars,* an eclectic not


Illustrissimo
Magnifico ac Celeberrimo Viro
Domino Alberto de Haller. etc. etc.
S: D
Leopoldus Auenbrugger medicus viennensis.

Mitto Tibi, Vir celeberrime: Librum, cui titulus
est, Experimentum nascens, de Remedio specifico,
sub Signo specifico in Mania Virorum. qui obser
vationum mearum Partus est, doleo imperfectus,
non quidem mei culpa, sed — — — — !
Suasu amicorum commotus, post duodecim annos,
ne foetus ipse omnino periret. manum admovi;
ut, qualiscunque foret, publicae Luci detur: fors
aliorum Pietatem Opemque experiundo, in Salu=
tem infelicissimae hominum sortis. aliquando
perficeretur
Quod, ut eveniat, proposui, exterorum Medico
rum, praeprimis vero Tuam in observando medendo
que Excellentiam implorare, et obtestari; ut vel ipse,
vel per Medicos Tibi conjunctos, nascens hoc meum.

Fig. 4. Letter of transmittal in Auenbrugger's handwriting sent to Albrecht von Haller with text of his study on the use of camphor in excitements.

strictly medical publication, considered the book worthy of attention in the year after its publication and regarded the material as new.

His language should have drawn immediate attention for he wrote: "This serious work is set down in 95 pages." Nor was this the blind admiration of a friend, for his friendship with Auenbrugger was to grow later. It seems a broad, objective view (Figure 4).

From yet another quarter—Montpellier—came admiration. In 1770, Rozière de la Chassagne translated segments of the work to include in his volume on chest diseases. He employed the word "sensational" in describing the results of the technique. In his view the work was Hip-

Fig. 5. Portrait of Jean Nicolas, Baron Corvisart.

pocratic in spirit but distinguished from anything written by Hippocrates. For him Auenbrugger was linked in glory to Hippocrates and the work was truly a *novum inventum.*

Much as we try to find our way to a single reason for delay we do not succeed. Perhaps the suspicions of Auenbrugger were correct, for he wrote in the preface: "In truth, the forces of envy, malice, hatred, detraction and other calumnies are never lacking those men who illuminate or perfect the arts or the sciences by their findings." (Author's translation.)

The work was finally brought into true perspective by the translation of Jean Nicholas, Baron Corvisart, a year before Auenbrugger's death. Corvisart (Figure 5), distinguished by right of accomplishment,

was doubly distinguished by serving as physician to Napoleon. Corvisart learned of the technique of percussion through Stoll. Realizing that he had little to gain by translating the volume, he tells us that he knew some small temptation to discover the technique as his own. But he felt keenly the neglect of Auenbrugger and insisted on full credit for him. Laennec, pupil of Corvisart, was to learn percussion from him and, becoming proficient in the technique, practiced it and taught it. How it may have stimulated him toward auscultation is conjectural. Perhaps he employed an abstraction which had escaped Auenbrugger. For example, in the discussion of empyema, Auenbrugger had written: "If one lays the hand over the spot where percussion has indicated an empyema and has the patient cough, he can distinguish clearly the rustling of pus within the chest." (Forbes' translation.) This was most likely a case of empyema with a bronchopleural fistula. Had Auenbrugger made one further mental step, he might have listened with his ear and thus found the value not only of percussion but also of immediate auscultation. As it was, he was not to see the introduction of immediate or mediate auscultation, for he died before Laennec had even been trained.

These, then, are a few notions about this patient and charitable man who lived content with his work, to whom each patient was a clinic, worthy of voluminous notes. His family was a source of joy, he was blessed by a very long life. He was secure in a knowledge which he tried to impart. But the profession would not listen and so it could not hear.

The Viennese will say, as has Neuburger, that it was not Corvisart, nor Laennec, nor Piorry, but Josef Skoda, another Austrian, who secured immortality for Leopold Auenbrugger a quarter-century after his death when he characterized him "Gründer der neueren Diagnostik" —The Founder of the New Diagnosis. Indeed he was.

Never quite recovered psychologically from the earlier death of his wife, blind in one eye, he died at the age of 87, most likely of a lesser pneumonic episode at two o'clock in the afternoon on the 18th of May 1809.

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